



JIMMA UNIVERSITY

JIMMA INSTITUTE OF TECHNOLOGY

SCHOOL OF CIVIL AND ENVIROMENTAL ENGINEERING

CONSTRUCTION ENGINEERING AND MANAGEMENT CHAIR

EFFECT OF PROJECT MANAGER'S LEADERSHIP STYLE ON PROJECT
PERFORMANCE: A CASE STUDY ON PUBLIC BUILDING CONSTRUCTION
PROJECTS IN JIMMA ZONE

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INTRODUCTION

Background

- A construction project consists of a diversity of individuals and organizations which are all gathered to achieve a specific task in a specific time.
- The Project manager is one of the main parties in the role of the construction industry.
- The effectiveness of project managers in managing finances, schedule and quality act as the main liaison with the success of a project.
- Researchers in construction management have unequivocally reiterated the fact that **project manager is one of the most important success factors of projects.**



Cont...

- Researchers have stressed on the importance of leadership styles and have given a lot of suggestion on the characteristics, attributes and skills that can be effective in the construction industry.
- Study of leadership style and their effectiveness in managing projects is quite relevant to construction industry because construction managers have to wear different hats at different circumstances.
- **Thus** the aim of the study is to investigate the manager's approach to leadership in construction industry. This was done by focusing on the actual leadership styles of Project managers in the construction industry.



Statement of the Problem

- Based on research conducted by Oshinubi (2007), a common problem that affect group's performance was came from the project manager's leadership style itself.
- The problem in the poorest of effective leadership and the bigger problem is about management practices in the construction industry, which will cause **wasted time, unnecessary costs, and increases of errors** in the construction process or completed construction.
- Previous research stated that one of the problems of **unsuccessful construction** project is **because of poor leadership skills** as a project manager.
- As the Ethiopia's construction industry has recently begun to develop it has limited academic research in the field of leadership styles in the industry and its influence on project performance.

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Research Questions

The major question is: What kind of skills can make a difference in successfully managing a project and which are the most important ones?

Now the basic questions are:

- Is it necessary to apply principles of Leadership in construction industry?
- What are the prevailing styles of leadership that are applied in construction projects?
- What are the effects of leadership styles on the construction project performance?



Scope of the Study

- The study was targeted on the identification of the importance of Leadership and major Leadership style of public construction projects in Jimma Zone.
- Therefore this research did not include all construction projects throughout the country due to time, cost and available data resource limitations.



Significance of the study

- Projects are usually unique and often are associated with unknowns, complexity, and uncertainty. Obviously, a project manager's role is more challenging than that of a typical, functional manager.
- This study would be a significant endeavor in promoting good work environment in the workplace and motivations of its employees.
- Moreover, the study would provide recommendations on how to evaluate the performance of a certain Project in accordance to effectiveness of Leadership style.



Research Objectives

General Objective: To analyze the effect of project manager's leadership style on the construction project performance of Jimma Zone.

Specific Objectives:

- To analyze the importance of Leadership in construction industry.
- To identify the prevailing leadership styles which are applied in different construction projects of Jimma zone.
- To determine the effects of leadership styles on the construction project performance



METHODOLOGY

The study Area

- The study was conducted on public projects (Building projects) in Jimma town and some selected projects of Jimma zone.
- **Jimma** is one of the zones of the Ethiopian Region of Oromia. Jimma is bordered on the south by the Southern Nations, Nationalities and Peoples Region, the northwest by Illubabor, on the north by East Welega, and on the northeast by West Shewa; part of the boundary with East Shewa is defined by the Gibe River.



Study area(Jimma Zone)



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Methodology ...

Study Period: The study was conducted from end of November, 2015 to end of April 2016.

Study Design:

- The literature review and data collection by interview and questioners were conducted.
- The collected questioners were **analyzed** up to end of April, 2016 by using **Excel** and **Statically Package for Social Science V20** software.



Methodology ...

Population

The main sources of the information were :

- Project managers of the contractor, Supervisors of the consultant
- Representatives of the client who run the projects

Sample size and Sampling Techniques

- Respondents were selected **purposively**.
- Questioners were distributed to 21 Construction Companies 5 consultants, 21 contractors, 4 clients who were participating in building projects of Jimma Zone.

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Methodology ...

Materials:

- Since the research did not need any experiment, no experimental equipments were required. But, the main tool of this research is excel and SPSS 20 which the questionnaires were analyzed.
- The relative importance index (RII) of Likert 5 scale rating is a means of Leadership Style selection.



Methodology ...

Method of Data Analysis

- Data collection tools were adapted after review of relevant literatures and used.
- Data collection was free from any bias and all collected datas were included in the output.
- The score assigned to each statement by the respondents represents the degree to which the they agree to the task stated. This degree of agreement value vary from 1 (strongly disagree up to 5 (strongly agree).

Relative importance index: The Relative Importance Index (RII) is a statistical method which is used to determine the ranking of different Leadership Styles.

$$RII = \frac{\sum W}{A * N} = \frac{1 * n_1 + 2 * n_2 + 3 * n_3 + 4 * n_4 + 5 * n_5}{5 * N}$$

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Ethical Consideration

- In order to avoid problems that will be occurred the data was only be collected after ethical clearance is obtained from JiT Research, Publication, and Graduate Studies & Consultancy Office of JiT.
- Informed consent was obtained from the organization before proceeding to the data collection.
- The purpose of the survey is entirely academic and it was clearly described to the organization.
- Any information concerning projects was kept confidential and questionnaires collected from organization analyzed only for intended purposes.

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List of Variables

Independent Variables:

- Leadership in Construction
- Leadership skill
- Leadership style

Dependent Variables:

- Project Performance



Data Collection Process

In order to have a good output of the research both primary and secondary sources of projects were included.

➤ *Primary sources:* questionnaire, interview and open discussion.

a) Design of a Questionnaire

The questionnaire was aimed to collect mainly qualitative data, so that Leadership in construction, types of Leadership style and the effect of leadership style on project performance.

✓ *Pilot Questionnaire*

Before the main survey was undertaken, a draft version of the questionnaire was piloted in three building construction project sites in Jimma town.



Table 3.3: Summary of distributed and collected questionnaires

Name of Organization	Number of Questionnaires sent	Number of questionnaires returned back	% of returned questionnaires	Valid returned questionnaires	% of valid returned questionnaires
Contractors	60	52	86.67	49	81.6
Client	15	13	86.67	12	80
Consultant	35	30	86.67	28	80
Total	110	95	86.67	89	80.91

➤ *secondary sources:* journals, internet sources and researches



Data Processing and Analysis

- First of all the questionnaires was examined on accuracy and relevancy in order to filter the forms which cannot be used for further analysis.
- The collected data from respondents was checked for accuracy, completeness, consistency and reliability across all data sources.

Reliability of data

- The **reliability** of the data were checked by using **Cronbach Alpha's coefficient**. The normal range of Cronbach's coefficient alpha value between 0.0 and + 1.0, and the higher values reflects a higher degree of internal consistency (Hammad, 2013).
- Due to the above conditions data quality control and analysis were **surely qualified**.



Frequency Analysis

- Descriptive statistical methods such as tables and charts were used to analyze the responses from the questionnaire.

Mean Index Score

- Mean index score was used to generate ranking of the variables of interest based on the scores assigned by the respondents.

$$\text{Mean score (I)} = I = \frac{\sum a_i \times x_i}{\sum X_i}$$

Where **I**=Mean Score, **a** =Rank of event i and **x**=frequency of event i



RESULTS AND DISCUSSION

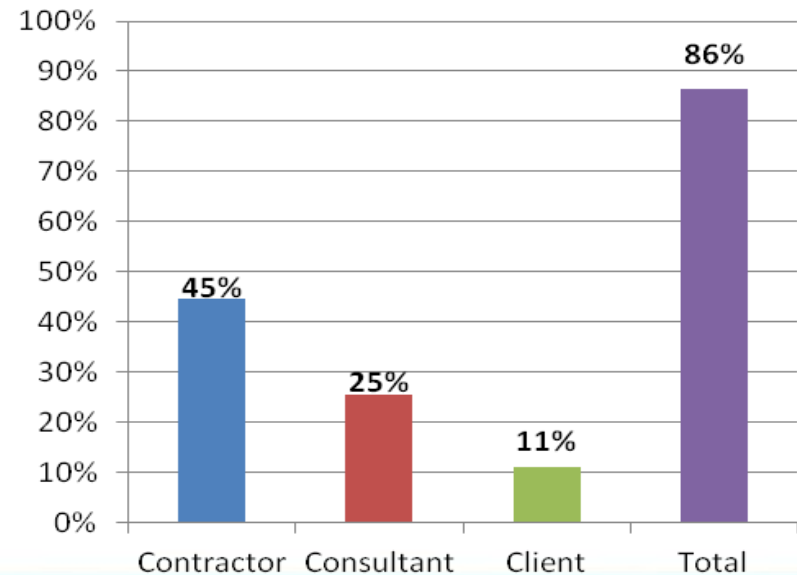
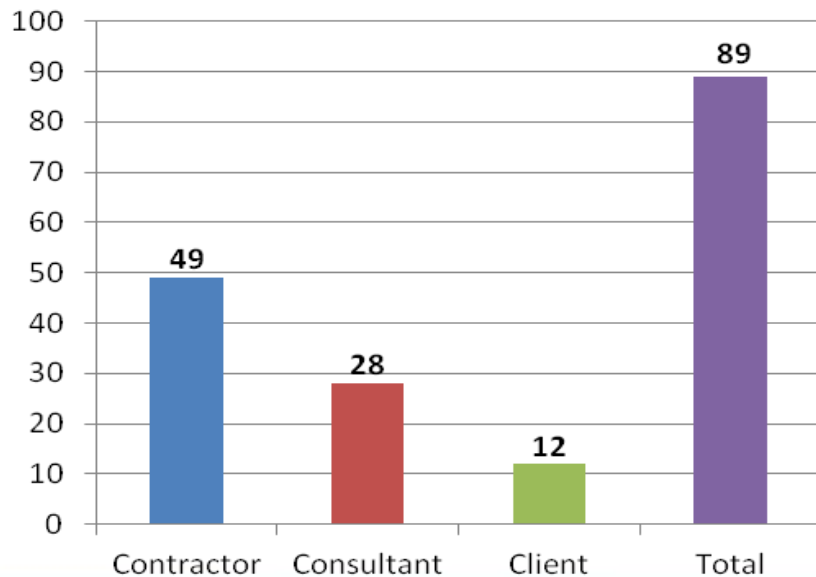
Demographic Characteristics of Respondents

The demographic information was an introduction to the respondents which could give the summarized information about types of organizations, respondents years of experience and occupational position.

From the first part of the survey it was found that people having the supervisory capacity or holding managerial position had a much greater time of service in the industry. Over 40% of the supervisors surveyed had over 7 years experience in the industry.



Survey Response: The useable survey forms (questioners) received back were 95 out of 110 distributed, thus giving an overall response rate of 86.36%. The response rate of 86% is satisfactory.



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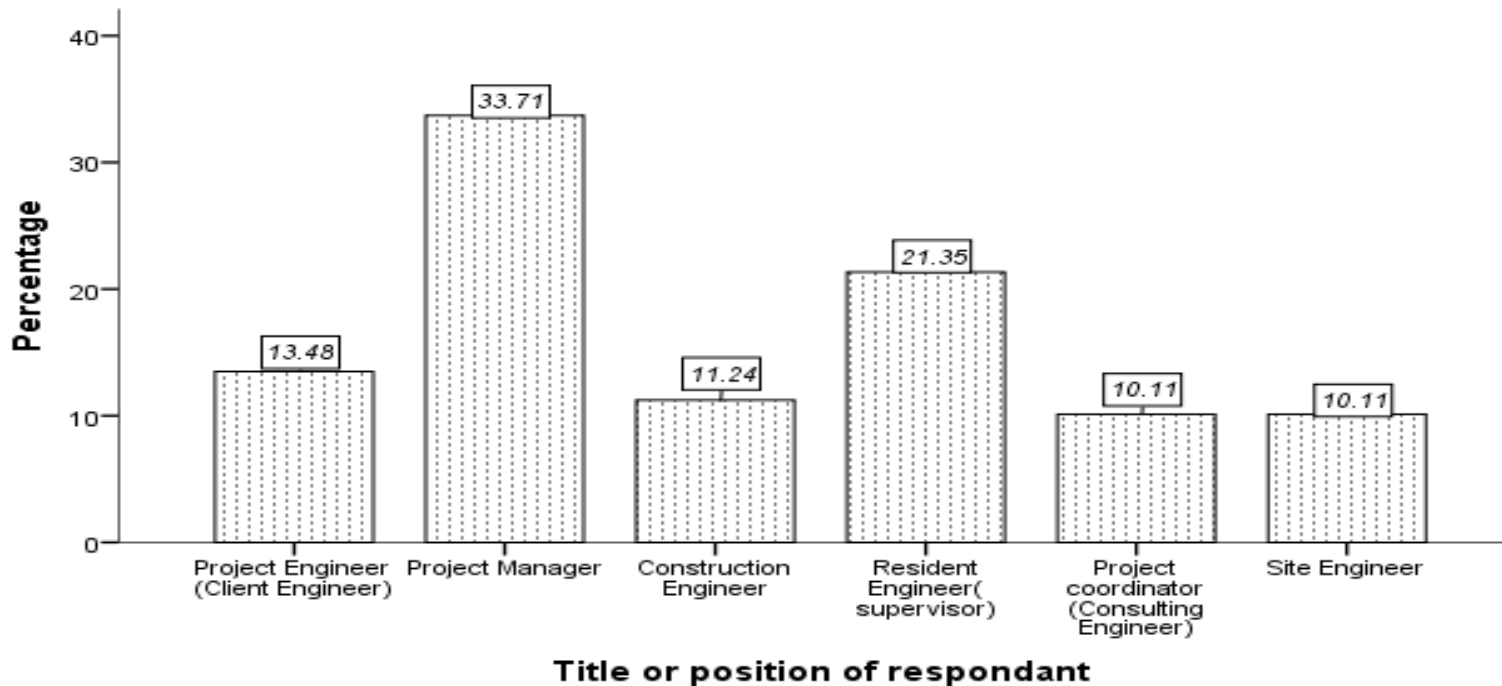
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Considering the current positions in their construction industry , 13.48 % , were project engineers, 33.71 % project managers, 11.24 % construction engineers, 10.11 % site engineers, 21.35 % resident engineers , and 10.11 % project coordinators of consultant .



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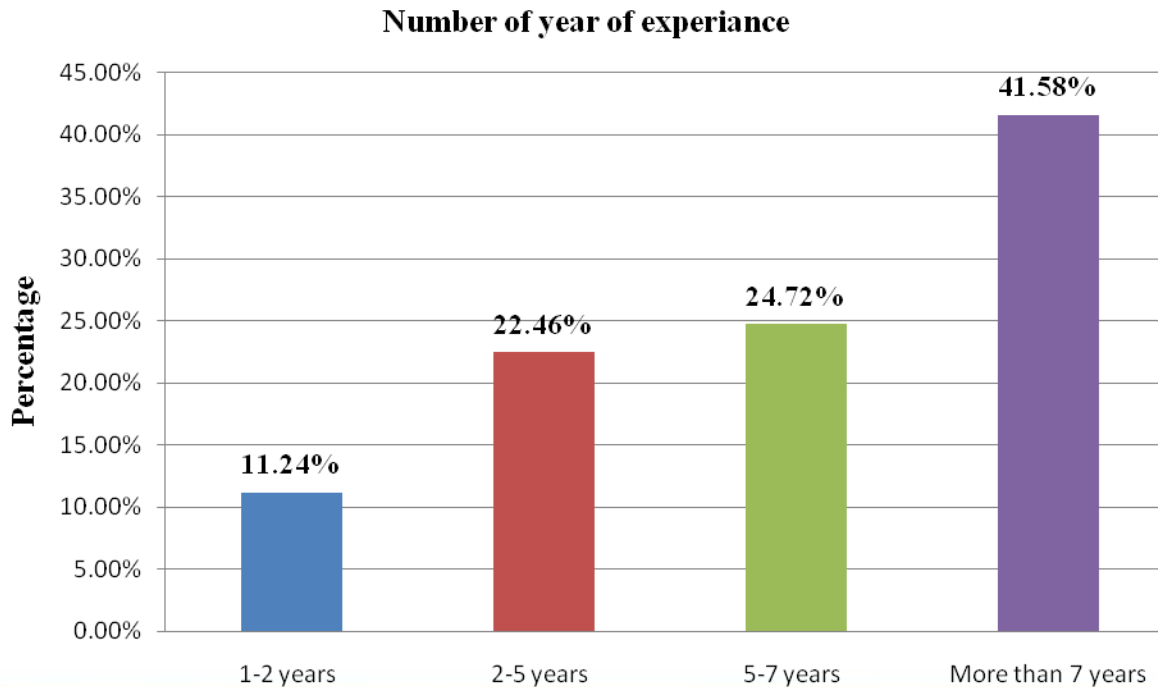
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Regarding the working experience of the respondents surveyed, Figure.4.5 shows that, majority of the respondents (about 41.58%) had worked in the construction industry more than 7 years, 24.72 % between 5-7 years, 22.46 % between 2-5 years and 11.24 % between 1-2 years.



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Reliability Check - Cronbach's Alpha

- SPSS v20 was used to run the value of Cronbach's alpha and the results for Leadership in construction, Leadership skill and Project performance are as shown below.
- The values show that, all are reliable because they are greater than 0.5 all are greater than 0.7 which shows questionnaires are highly reliable.

Table 4.2: Cronbach's Alpha for questionnaires reliability checking

S.No.	Independent Variables	Cronbach's Alpha value	Number of Items
1	Leadership In construction	0.858	8
2	Leadership skill	0.941	24
3	Project Performance	0.780	7



Analysis of Leadership in construction

- The first specific objective of this study was to analyze the importance of leadership in construction industry.
- In order to determine the degree of respondents agreement on necessity of leadership in construction project sites, the following classification of the ratings based on the Likert Scaling were used and the test value of 3.0 (Majidn,1997; Aminudin ,2006) where,
- Mean ratings on the statements were calculated based on a scale of 1-5 (from “Stronglydisagree” to “strongly agree”).



Table 4.3: Leadership analysis in construction industry

	N	Mean	Std. Deviation	Ranking
Is Leadership necessary in construction projects?	8	4.8	0.404	1
Is it important for a leader to have formal leadership training to be successful?	8	4.52	0.77	2
It is best to create an environment where the team members take ownership of the project. Everyone should participate in the decision making process.	8	4.25	1.1	3
Successful project managers have high level leadership skills	8	4.11	0.76	4
Project manager should ask employees for their vision of where they see their jobs going and then use their vision where appropriate	8	3.99	0.511	5
I feel extremely satisfied with my job when working for a project manager.	8	3.58	0.927	6
It is important for someone to demonstrate leadership in order to be promoted to a leadership position.	8	3.3	0.817	7
Project managers in construction industry follow principles of Leadership?	8	3.29	1.208	8
Average Mean		3.98		



Prevailing Leadership Styles

- The second section of the questionnaire inquired about the existing leadership style in the Organizations and their extent.
- Respondents were asked to mark a set of statements based on their reaction on a scale of 1 to 5.
- Four major types of Leadership styles has been identified from literature review and based on respondent's reaction to the statements their leadership style is identified to fall among the four styles (Authorcratic, Coaching, Participative and Delegate).



Leadership Styles analysis

Prevailing Leadership style							
Autocratic(Direct (S1)		Coaching(S2)		Participative(facilitate(S3)		Delegate(S4)	
Statement No.	Weighting	Statement No.	Weighting	Statement No.	Weighting	Statement No.	Weighting
1	245	2	229	3	198	4	271
5	271	6	271	7	250	8	265
9	280	10	255	11	239	12	284
13	250	14	279	15	262	16	304
17	287	18	268	19	265	20	280
21	274	22	296	23	267	24	280
Total	1607		1598		1481		1684

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Ranking of Leadership style

$$RII = \frac{\sum W}{A * N} = \frac{1 * n_1 + 2 * n_2 + 3 * n_3 + 4 * n_4 + 5 * n_5}{5 * N}$$

Where; RII=Relative Importance Index

W=weighting given to each factor by respondents from 1 to 5.

n₁, n₂, n₃, n₄ and **n₅** are number of respondents for strongly-dis agree, disagree, neutral, agree, strongly- agree respectively.

A =highest weight (i.e.5 in this case), **N**=total number of respondents.

The RII value had a range between $0 < RII \leq 1$.



Ranking of Leadership Styles

Leadership Styles	Statement No.	Weighting	RII	Group Rank	Average RII	Over all Rank
Autocratic	1	245	0.551	6	0.602	2
	5	271	0.609	4		
	9	280	0.629	2		
	13	250	0.562	5		
	17	287	0.645	1		
	21	274	0.616	3		
Coaching	2	229	0.515	6	0.599	3
	6	271	0.609	3		
	10	255	0.573	5		
	14	279	0.627	2		
	18	268	0.602	4		
	22	296	0.665	1		
Participative	3	198	0.445	6	0.555	4
	7	250	0.562	4		
	11	239	0.537	5		
	15	262	0.589	3		
	19	265	0.596	2		
	23	267	0.600	1		
Delegate	4	271	0.609	4	0.631	1
	8	265	0.596	5		
	12	284	0.638	2		
	16	304	0.683	1		
	20	280	0.629	3		
	24	280	0.629	3		

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The Effect of Leadership Styles on project performance

The survey's third and major part dealt with the manager's viewpoint of what they consider in the success of their project.

➤ More than 85 % of the managers surveyed agreed or strongly agreed that completion of task was the most important aspect of their project success.



	N	Mean	Std. Deviation	Ranking
Leadership is necessary in completing projects successfully	89	4.80	0.404	1
I consider completion of task as the most important measure of my project success.	89	4.36	0.678	2
I consider my relationship with the subordinates as the most important factor for my project success.	89	4.29	0.643	3
Successful project managers have high level leadership skills	89	4.11	0.760	6
I feel extremely satisfied with my job when working for a project manager.	89	3.58	0.927	7
Tasks and roles for workers should be defined only by PM.	89	3.47	1.298	8
PM should consider the ideas and suggestions of workers.	89	4.16	0.824	5
All decisions should be made by PM.	89	3.18	1.163	9
The communication between PM and workers should be only one way.	89	2.12	0.998	10
PM should have the decision over the realization of tasks?	89	4.2	0.979	4
Average Mean		3.68		

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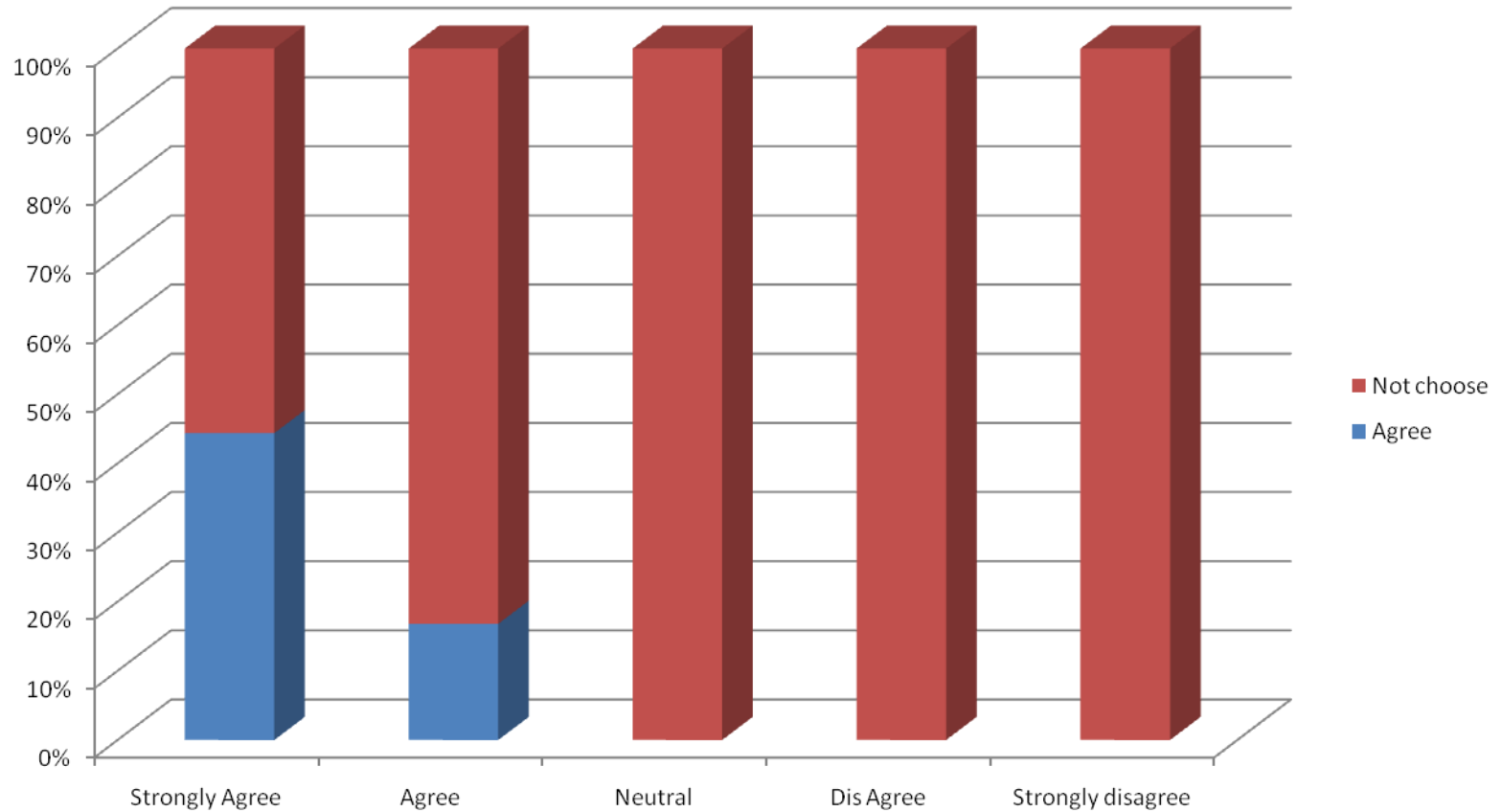
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Leadership is necessary in completing project successfully:



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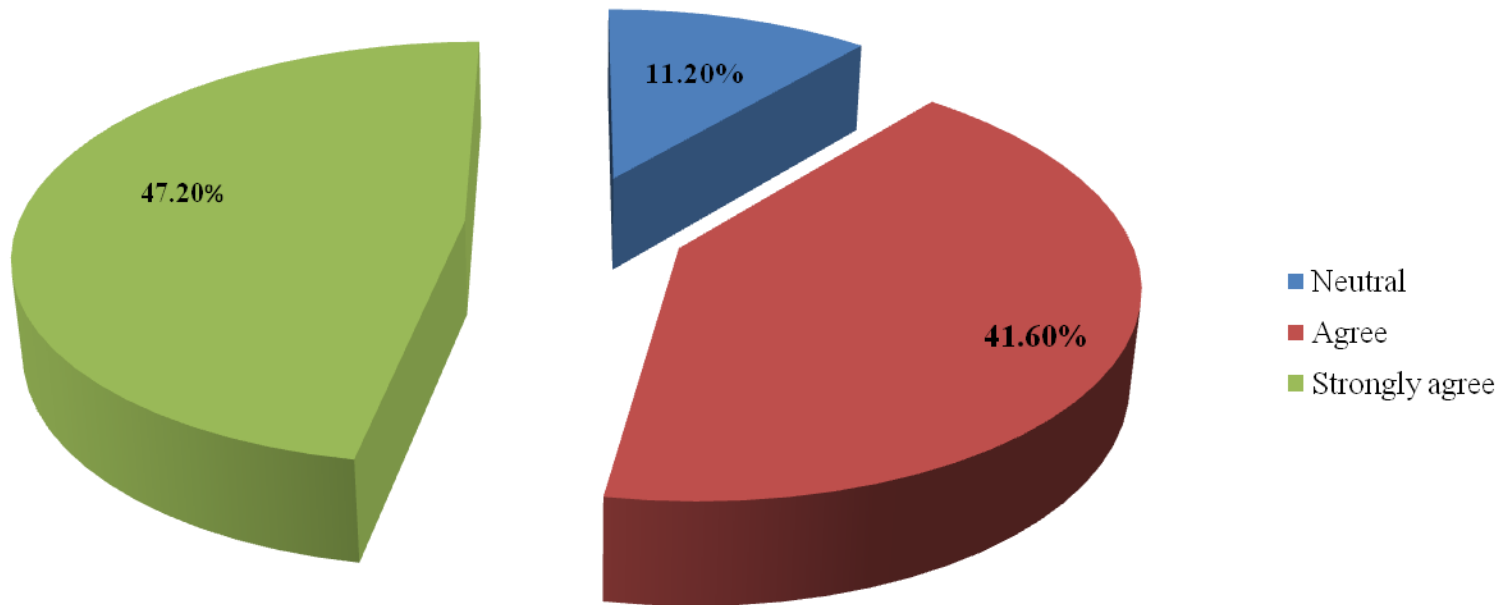
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- According to the survey, 71 (79.8 %) interviewees strongly agree, 18 (20.2%) agree with this statement; thus, the majority of respondents believe that leadership is necessary and a key factor of success in project management. This shows that Leadership style has direct influence on project success.



Completion of task:

Completion of task as measure of success





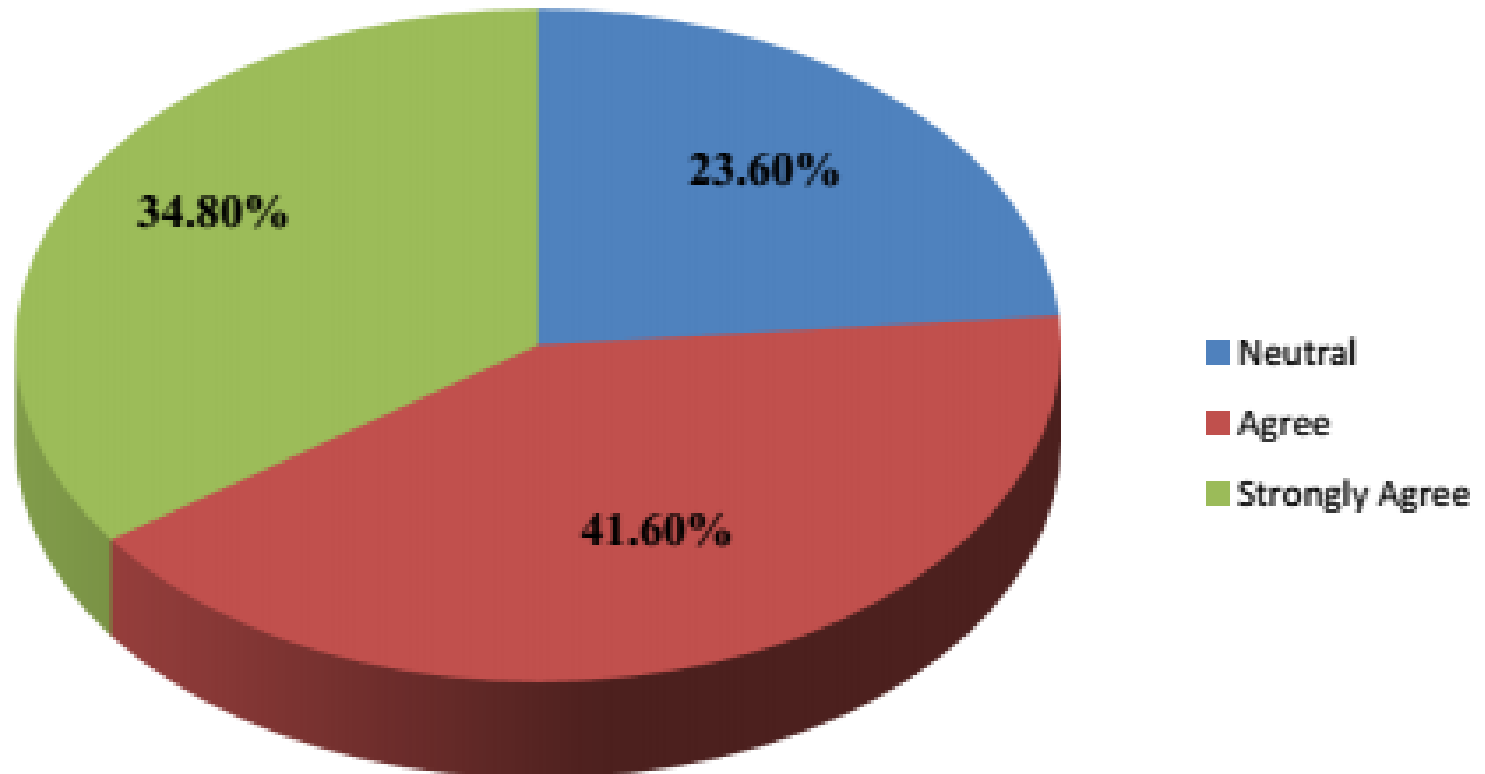
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- According to the survey, 42 (47.20 %) interviewees strongly agree, 37 (41.6%) agree and 10 (11.2%) neither agree nor disagree with this statement; thus, the majority of respondents believe that completion of task is the most important measure of their project success.
- This shows that most managers are task oriented and completion of task as direct relation with project success.



Levels of Leadership

I feel that successful project managers have high-level leadership skills.



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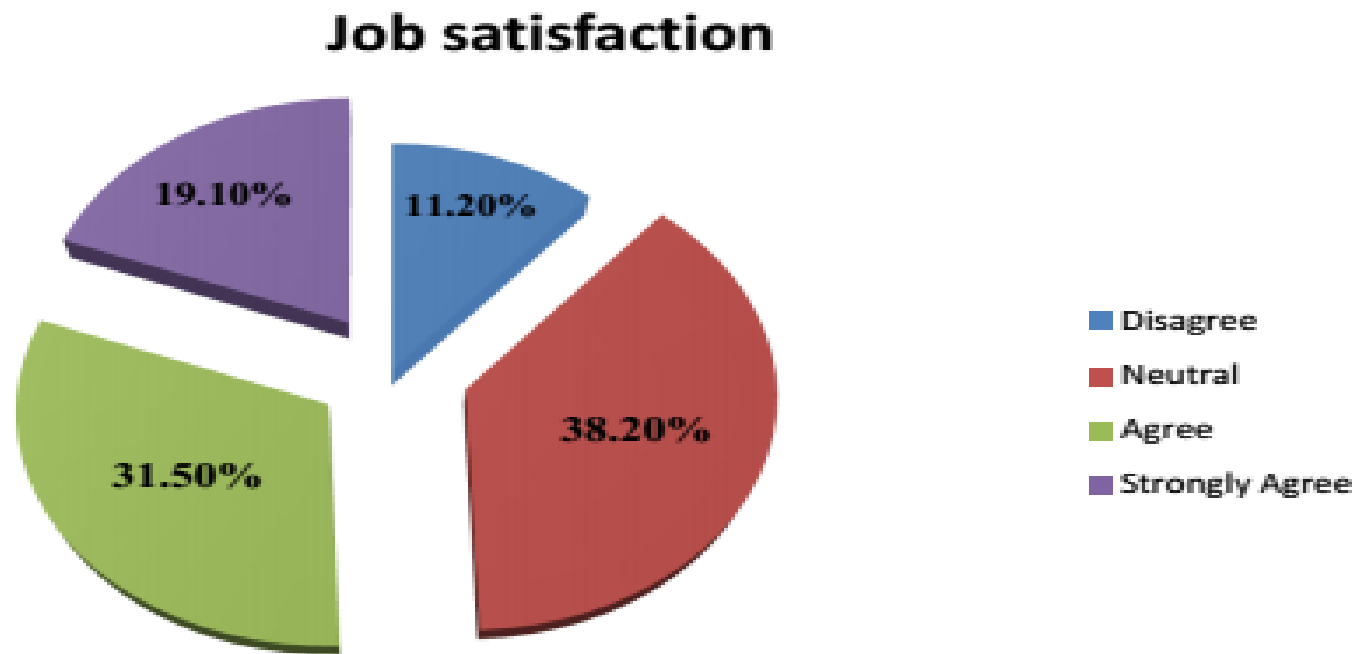


- Of the respondents, 76% people in the survey believe successful project managers have a high level of leadership skills and 23.6% neither agree nor disagree with that statement.
- In some cases, projects may be completed by a leader with low-level skills; however, if this leader could acquire more skills, the project may be more successful in some aspects. For example, the project may have greater time-savings, reduced total costs or lead to greater profit.



Job Satisfaction

➤Statement 4: I feel extremely satisfied with my job when working for a project manager.





CONCLUSIONS AND RECOMMENDATIONS

Conclusion

➤ The first objective of this study was to investigate the importance of leadership in construction on governmental building construction projects. Due to this by conducting questioner analysis and interview; although principles of leadership are not applied to construction; Almost 100% of the respondents have agreed that Leadership is necessary in Construction projects which implies much has to be done to make leadership practical in construction projects.



Conclusion...

- Secondly the aim of this study was to identify the different types of leadership styles which are prevalent in construction projects of Jimma Zone. The ranking result indicates that (1). Delegate style of Leadership; (2) Autocratic style of Leadership; (3). Coaching style of Leadership; (4). Participative styles of Leadership were identified.



Conclusion...

The third objective of the study was to analyze the effect of leadership styles on construction project performance. Based on the analysis result the following conclusions can be drawn with respect to project performance.

- Leadership style has direct influence on project success.
- Completion of task is the most important measure of the project success. This implies most managers are task oriented and completion of task as direct relation with project success.



- Leadership style has direct influence on Job satisfaction of employee; if employees are not comfortable with the style of leadership there will be decrease in performance of project since project performance is directly related to employee's efficiency.



Recommendation

On the basis of findings and conclusions drawn from the study, the following recommendations are proposed.

- Contractors, consultants, clients and other professionals working in the construction industry should understand that Leadership is important in construction project management and professionals should apply principle of leadership to get a better performance of a project.
- Representatives of the Client, Contractor and Consultant who are on managerial position should focus on relationship beside on completion of task to get a complete and progressive success.

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Recommendation...

- Regular leadership training should be prepared for managers to improve their leadership skills.
- Project managers should have some motivations like Reward and recognition schemes for their workers to have some level of job satisfaction.
- Project managers should have better leadership style when compared to those managing simple projects.
- The decision making should be made only after taking suggestions and ideas from the workers to get better output.

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Recommendation for future study

The undertaken research does have following shortcomings;

- The study could have extended its survey scope to site workers but it is foreseen that a little effect will be noted.
- Employees' job satisfaction for different type of construction organizations can be studied deeply by focusing survey to managers.
- In depth study on how to practice leadership in construction should be done.
- What are the basic leadership skills that are important for managers who work in construction industry of Ethiopia would be worth investigation.



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- First and for most I would like to Glorify Almighty God for helping me through the entire situation I passed in doing the research.
- Second I would like to express my deepest gratitude to my advisor Dr. Ing Esayas Alemayehu (Associate Professor) & co-adviser Mr Mamuye Bussier (MSc) for all their limitless efforts in guiding during the research study.
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Thank you
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